Hexachloroethane

Chemical Information
CAS Number - 67-72-1
Alternate Names - carbon hexachloride, ethane hexachloride, perchloroethane
General Uses - This chemical is mostly used by the military to make weapons that produce smoke, such as smoke pots and grenades used during training. It is also present as an ingredient in fungicides, insecticides, lubricants and plastics.
Potential Hazards - This chemical is highly toxic; it may be fatal if inhaled, swallowed or absorbed through the skin.

Summary Analysis– Hexachloroethane

- In 2003, the 2,734,341 pounds of hexachloroethane accounted for 3.5 percent of the total quantity of PCs. Since 1999, there was a 24.6 percent decrease in the quantity of hexachloroethane. Ten facilities reported this chemical in 2000-2003.
- Since 1999, treatment was the primary method used to manage hexachloroethane. In 2003, although the quantity treated decreased, compared to previous years, treatment was used for almost 95 percent of the total quantity of hexachloroethane.
- Of the 10 facilities that reported hexachloroethane in 2003, 1 facility accounted for 60 percent of the total quantity and 5 facilities reported almost 94 percent of the total quantity of this chemical.
- Since 1999, the overwhelming majority of hexachloroethane was reported by facilities in Region 6. In 2003, Region 6 facilities accounted for over 96 percent of the total quantity of hexachloroethane. However, this quantity represents a decrease of over 25 percent since 1999 and is indicative of a trend of decreasing quantity since 2000.
- Facilities in Louisiana accounted for over 71 percent of the total quantity of this chemical in 2003. Texas facilities accounted for over 25 percent.
- Facilities in SIC 2869 (Industrial organic chemicals, nec) and SIC 2812 (Alkalies and chlorine) reported over 96 percent of hexachloroethane in 2003.

National Trends – Hexachloroethane. Exhibit 4.111 presents the total PC quantity (lbs.) of hexachloroethane in 1999 to 2003, showing the disposal, treatment, energy recovery, as well as recycling quantities. In 2003, the 2,734,341 pounds of hexachloroethane accounted for 3.5 percent of the total quantity of PCs. Since 1999, there was about a 25 percent decrease in the quantity of hexachloroethane. The number of facilities that reported hexachloroethane between 1999 and 2000 remained relatively constant, with 10 facilities reporting this chemical in 2000-2003.

Since 1999, treatment was the primary method used to manage hexachloroethane. In 2003, although the quantity treated decreased, compared to previous years, treatment was used for almost 95 percent of the total quantity of hexachloroethane. Energy recovery was used for about 5 percent of the quantity. Significant quantities of hexachloroethane were recycled each year (1999-2003), including over 2.3 million pounds in 2003.

Exhibit 4. 111. National-Level Information for Hexachloroethane

	1999	2000	2001	2002	2003	Percent Change (1999 - 2003)	Management Method -- Percent of Quantity of this Chemical in 2003
Number of Facilities	8	9	8	8	10	25.0%	
Disposal Quantity (lbs.)	191	2,482	233	306	254	33.1%	0.0%
Energy Recovery Quantity (lbs.)	827,873	1,245,190	455,985	143,877	139,929	-83.1%	5.1%
Treatment Quantity (lbs.)	2,797,306	4,462,309	3,689,031	3,849,238	2,594,158	-7.3%	94.9%
Priority Chemical Quantity (lbs.)	3,625,369	5,709,981	4,145,249	3,993,421	2,734,341	-24.6%	
Recycling Quantity (lbs.)	2,094,072	1,027,963	850,000	3,530,419	2,336,505	11.6%	

Exhibit 4.112 shows the number of facilities that reported hexachloroethane within various quantity ranges. Of the 10 facilities that reported hexachloroethane in 2003, 1 facility accounted for 60 percent of the total quantity and 5 facilities reported almost 94 percent of the total quantity of this chemical.

Exhibit 4. 112. Distribution of Facilities that Reported Quantities for Hexachloroethane (2003)

Hexachloroethane (2,734,341 pounds)		
Quantity Reported	**Number of Facilities Reporting this quantity**	**Percent of Total Quantity for this Priority Chemical**
up to 10 pounds	0	0.0%
between 11 - 100 pounds	0	0.0%
between 101 -1,000 pounds	1	less than 0.1%
between 1,001 - 10,000 pounds	0	0.0%
between 10,001 - 100,000 pounds	4	6.3%
between 100,001 - 1 million pounds	4	33.7%
> 1 million pounds	1	60.0%

EPA Region Trends- Hexachloroethane. Exhibit 4.113 shows the quantity (pounds) of hexachloroethane for those 5 EPA Regions where facilities reported this PC in 1999-2003. In 1999, facilities in only 3 of the 10 EPA Regions reported hexachloroethane; in 2003, facilities in 4 of the Regions reported hexachloroethane. Since 1999, the overwhelming majority of hexachloroethane was reported by facilities in Region 6. In 2003, Region 6 facilities accounted for over 96 percent of the total quantity of hexachloroethane. However, this quantity represents a decrease of about 26 percent since 1999 and is indicative of a trend of decreasing quantity since 2000. Facilities in several other Regions also reported decreased quantities of hexachloroethane in 2003. A facility in Region 10 began reporting hexachloroethane in 2003. Exhibit 4.114 illustrates the distribution of facilities reporting hexachloroethane quantities in 2003.

Exhibit 4. 113. Quantity of Hexachloroethane Reported by EPA Regions (1999-2003)

EPA Region	1999	2000	2001	2002	2003	Percent Change in Quantity (1999-2003)	Percent Of the Total Priority Chemical quantity (2003)
4	0	0	0	84,900	0	NA	0.0%
5	87,890	70,764	63,652	0	11,549	-86.9%	0.4%
6	3,537,063	5,638,985	4,081,334	3,907,982	2,631,204	-25.6%	96.2%
7	416	232	263	539	333	-20.0%	0.0%
10	0	0	0	0	91,255	NA	3.3%
Total	3,625,369	5,709,981	4,145,249	3,993,421	2,734,341	-24.6%	

Exhibit 4. 114. Distribution of Facilities Reporting Hexachloroethane in 2003 & Quantity of Hexachloroethane Reported in 2003 per Region

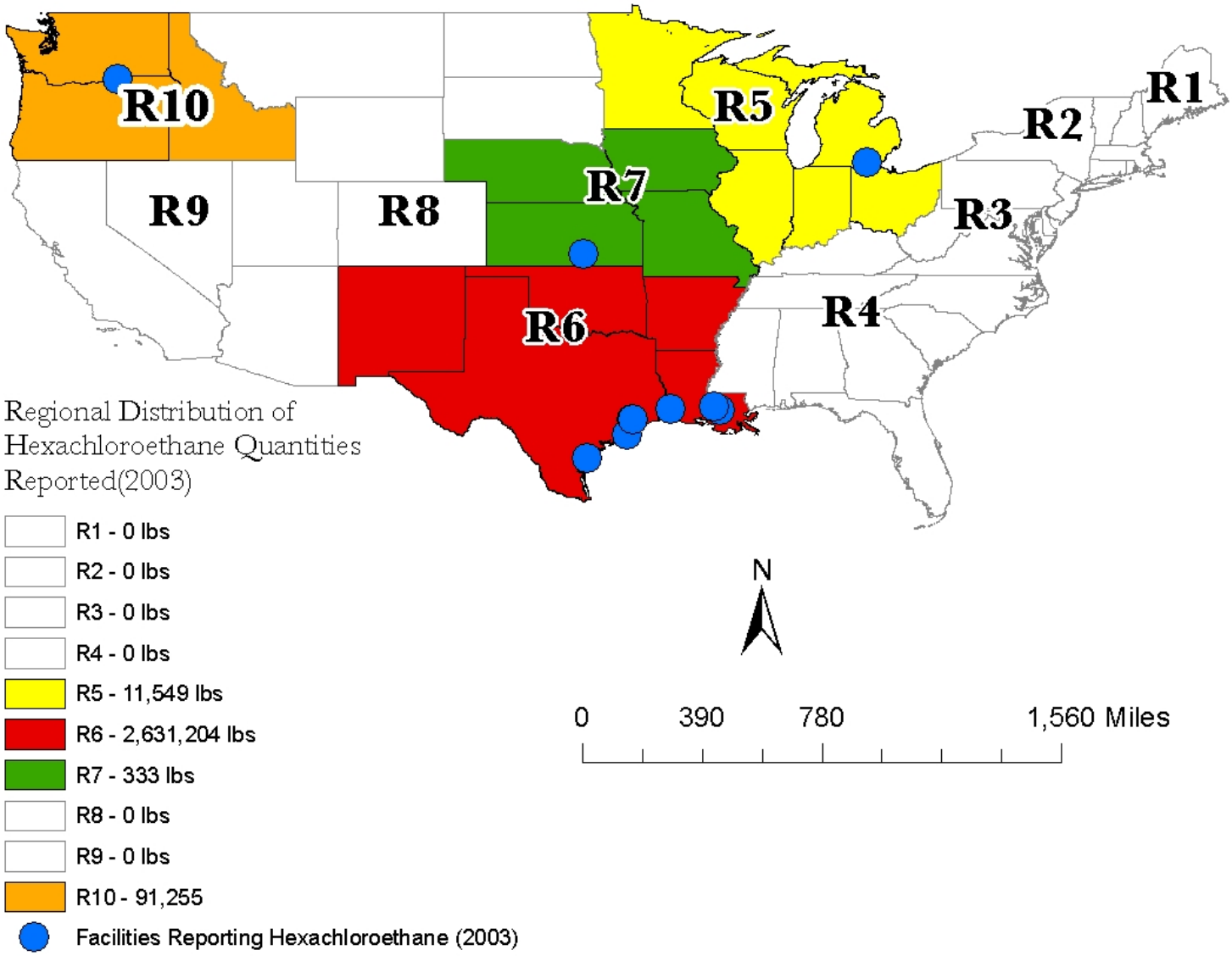


Exhibit 4.115 shows how hexachloroethane was managed by facilities in the 4 EPA Regions in 2003. In 2003, almost 94 percent of the PC quantity of hexachloroethane was treated, mostly onsite -- at facilities in Region 6. About 5 percent of the hexachloroethane also was managed via onsite energy recovery, primarily by facilities in Region 6. Facilities in Regions 5 and 6 recycled notable quantities of hexachloroethane in 2003.

Exhibit 4. 115. Management Methods for Hexachloroethane, By EPA Region (2003)

EPA Region	Disposal		Energy Recovery		Treatment		Recycling	
	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
5	0	0	0	11,549	0	0	0	40,910
6	0	0	128,380	0	2,472,278	30,546	2,295,595	0
7	254	0	0	0	0	79	0	0
10	0	0	0	0	88,911	2,344	0	0

State Trends- Hexachloroethane. Exhibit 4.116 shows the quantity of hexachloroethane, between 1999 and 2003, that was reported by facilities in 5 states. Facilities in Louisiana accounted for over 71 percent of the total quantity of this chemical in 2003. Texas facilities accounted for over 25 percent. Except for the facility in Oregon that only began reporting hexachloroethane in 2003, the quantity of hexachloroethane decreased significantly in each of the other 4 states, compared to the quantity in 1999. Exhibit 4.117 shows the states with significant quantity trends.

Exhibit 4. 116. State-Level Information for Facilities Reporting Hexachloroethane (1999-2003)

State	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
Louisiana	2,300,579	2,454,853	1,506,255	918,178	1,945,275	-355,304	-15.4%	71.1%
Texas	1,236,484	3,184,132	2,575,079	2,989,804	685,929	-550,555	-44.5%	25.1%
Oregon	0	0	0	0	91,255	91,255	NA	3.3%
Michigan	87,890	68,464	63,652	0	11,549	-76,341	-86.9%	0.4%
Kansas	416	232	263	539	333	-83	-20.0%	0.0%

Exhibit 4. 117. Trends Analysis on States with Largest Quantity Increase and Decrease (1999 – 2003): Facilities in Oregon and Texas

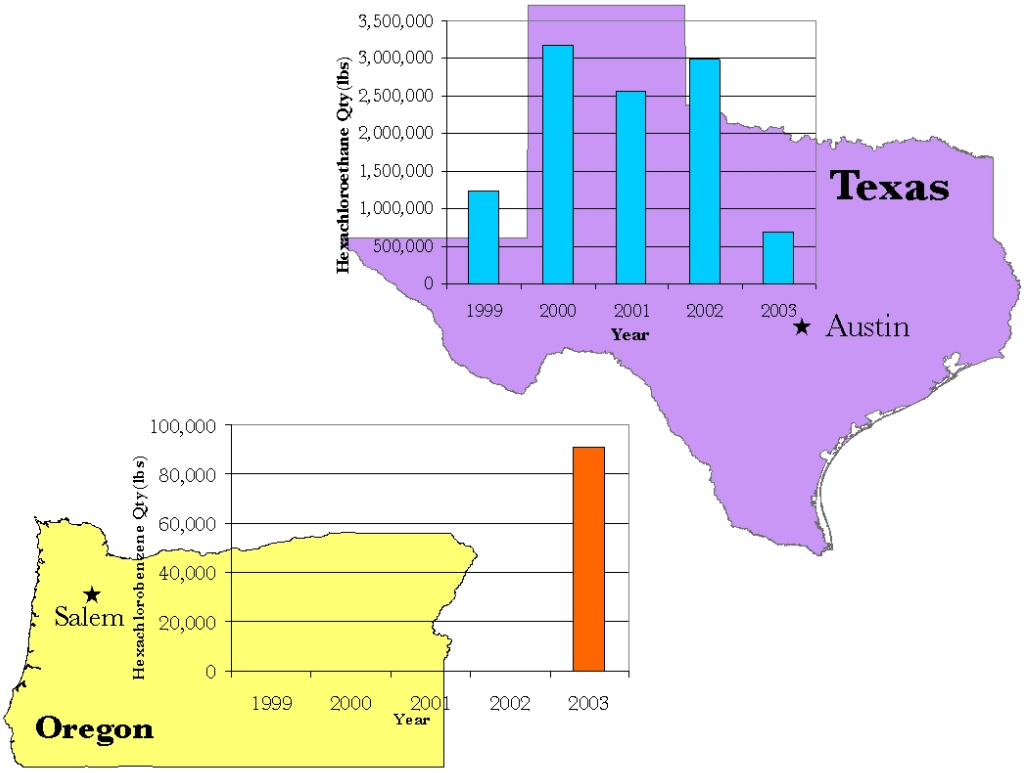
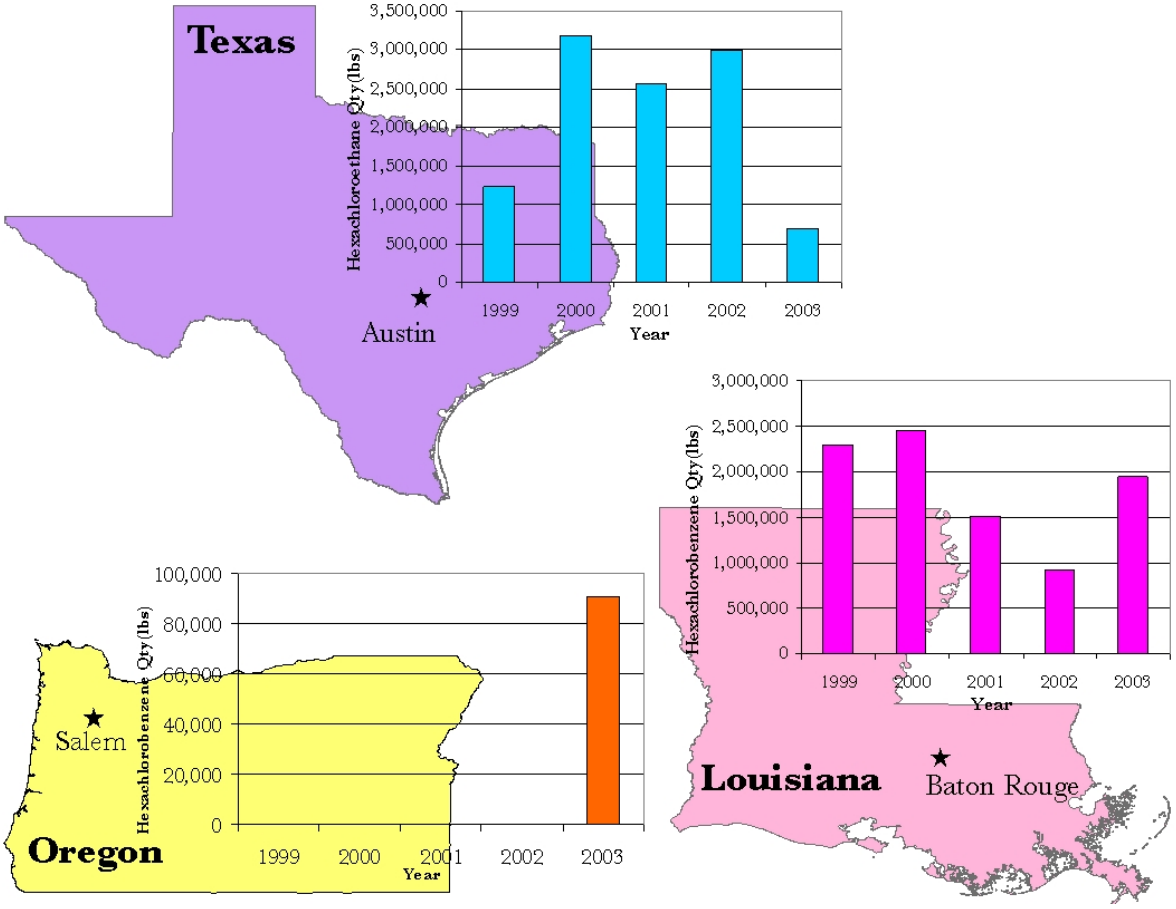


Exhibit 4.118 shows how hexachloroethane was managed by facilities in the 5 states that reported a quantity of this PC in 2003. In 2003, about 95 percent of hexachloroethane was treated, primarily onsite, by facilities in Louisiana, Texas, and Oregon (Exhibit 4.119). Energy recovery was used for about 5 percent of the hexachloroethane by facilities in Louisiana and Michigan. Most of the hexachloroethane from the facility in Kansas was disposed onsite. A significant quantity of hexachloroethane was recycled by facilities in Louisiana, Texas, and Michigan.

Exhibit 4. 118. Management of Hexachloroethane in States (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Louisiana	1,945,275	0	0	128,380	0	1,815,673	1,222	1,100,000	0
Texas	685,929	0	0	0	0	656,605	29,324	1,195,595	0
Oregon	91,255	0	0	0	0	88,911	2,344	0	0
Michigan	11,549	0	0	0	11,549	0	0	0	40,910
Kansas	333	254	0	0	0	0	79	0	0

Exhibit 4. 119. Trends Analyses of States with 95 Percent of Total Quantity (2003)



Industry Sector (SIC) Trends- Hexachloroethane. Exhibit 4.120 shows the PC quantity (pounds) of hexachloroethane for the 5 industry sectors (SIC codes) where facilities reported this chemical in 1999-2003. Three of these industry sectors accounted for over 99 percent of this chemical in 2003. Facilities in SIC 2869 (Industrial organic chemicals, nec) and SIC 2812 (Alkalies and chlorine) reported the highest quantities, accounting for over 96 percent of the total PC quantity of hexachloroethane in 2003. The quantity of hexachloroethane reported by facilities in SIC 2869 increased by over 400 percent since 1999 and more than doubled in 2003, compared to the 2002 quantity. Facilities in SIC 2812 reported over 78 percent less hexachloroethane in 2003, compared to the quantity reported in 1999. Likewise, the facility in SIC 2821 (Plastics materials and resins) reported a decrease of almost 87 percent in 2003.

Exhibit 4. 120. Industry Sector-Level Information for Hexachloroethane (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
2869	Industrial organic chemicals, nec	4	364,484	483,682	266,064	801,027	1,940,596	432.4%	71.0%
2812	Alkalies and chlorine	4	3,172,995	5,155,535	3,815,533	3,107,494	690,941	-78.2%	25.3%
9711	National security	1	0	0	0	0	91,255	NA	3.3%
2821	Plastics materials and resins	1	87,890	68,464	63,652	0	11,549	-86.9%	0.4%
3365	Aluminum foundries	0	0	2,300	0	0	0	NA	0.0%
3795	Tanks and tank components	0	0	0	0	84,900	0	NA	0.0%

Exhibit 4.121 shows how hexachloroethane was managed by the 10 facilities in the 4 industry sectors that reported a quantity of this PC in 2003. Over 98 percent of the hexachloroethane reported by facilities in SIC 2869 (Industrial organic chemicals, nec) and SIC 9711 (National Security) 2821) was treated, primarily onsite. Facilities in SIC 2812 (Alkalies and chlorine) used onsite treatment for almost 86 percent of their hexachloroethane and also used onsite energy recovery for the other 14 percent. Two of the 4 facilities in SIC 2812 reported significant recycling of hexachloroethane. Onsite energy recovery was used for 100 percent of the PC quantity of hexachloroethane reported by the facility in SIC 2821 (Plastics materials and resins). This facility also recycled a notable quantity of hexachloroethane in 2003.

Exhibit 4. 121. Management of Hexachloroethane in Industry Sectors (SIC Codes) (2003)

Primary SIC Code	SIC Description	Total Priority Chemical Quantity	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
2869	Industrial organic chemicals, nec	1,940,596	0	0	31,669	0	1,880,481	28,446	0	0
2812	Alkalies and chlorine	690,941	254	0	96,711	0	591,797	2,179	2,295,595	0
9711	National security	91,255	0	0	0	0	88,911	2,344	0	0
2821	Plastics materials and resins	11,549	0	0	0	11,549	0	0	0	40,910